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Technical Guidance on Review and Use of Excess Emission Reports

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Technical Guidance On Review and Use Of Excess Emission Reports

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16. ABSTRACT

The objective of this guidance is to assist EPA Regional Offices in proceeding expeditiously, and in a nationally consistent manner, with the review and follow-up of EER data from NSPS Subpart D and other source categories where the monitoring system is not the compliance method. The guidance suggests that agencies initiate this three-phase EER review and follow-up program concurrently with the development of a thorough inventory of CEMS-affected sources and the determination of the compliance status of these sources with CEMS installation and operating requirements. The guidance recommends the implementation of a methodical procedure to review and follow-up on EERs derived from sources which the agency believes for the most part are in compliance with their emission, monitoring, and reporting requirements. In general, the procedures are not designed primarily for use on known violators or sources which have had a long history of non-compliance. Although the guidance outlines a program primarily based upon Agency experience with EERs from large boilers, the guidance can be used for the review and follow-up of EERs derived from continuous emission monitoring systems required by most Federally-enforceable regulations (most current applications of CEMS data, other than direct compliance determinations with emission standards such as in Subpart Da).

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Technical Guidance On The Review and Use Of Excess Emission Reports

Prepared by

Louis R. Paley
Technical Support Branch

U.S. ENVIRONMENTAL PROTECTION AGENCY
Stationary Source Compliance Division
Office of Air Quality Planning and Standards
Washington, D.C. 20460

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ATTACHMENT

TECHNICAL GUIDANCE ON THE REVIEW AND USE OF EXCESS EMISSION REPORTS (EERS)

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TECHNICAL GUIDANCE ON THE REVIEW AND USE OF EXCESS EMISSION REPORTS (EERS)

I. Introduction and Summary

This guidance is in direct support of three Agency policy statements on the Stationary Air Compliance Program.* Although it outlines a program primarily based upon Agency experience with EERs from large boilers, the guidance can be used for the review and follow-up of EERs derived from continuous emission monitoring systems (CEMS) required by most Federally-enforceable regulations (most current applications of CEMS data, other than direct compliance determinations with emission standards such as in Subpart Da). Specifically these applications of CEMS/EER data include targeting, general source surveillance, determinations of compliance with operation and maintenance (O&M) requirements, and general case support.

The guidance recommends the implementation of a methodical procedure to review and follow up on EERs derived from sources which the agency believes for the most part are in compliance with their emission, monitoring, and reporting requirements. In general, the procedures are not designed primarily for use on known violators or sources which have had a long history of non-compliance. The guidance will facilitate the agency's division of the remaining ("nominally complying") sources into two groups: (a) those with suspected compliance problems; and (b) those that are apparently in compliance. For sources suspected of a violation, the agency should follow-up the EER review with conventional compliance methods such as stack tests, and for the second group simply update its compliance data system, as necessary.

It is believed that such a process will permit the agency to better concentrate its resources on those sources which have compliance problems. Accordingly, implementation of the guideline should be seen and used as an important supplement to an agency's present surveillance/compliance monitoring methods.

The technical guidance addresses various elements of an effective program to use EERs and is divided into five sections:

- development of a CEMS inventory and determination of source compliance with CEMS installation and operating requirements;

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* "Agency Operating Guidance FY 1985-1986" dated February 1984; "Compliance Strategy for Stationary Sources of Air Pollution", dated January 1984; "Strategy to Assure Continuous Compliance by Stationary Sources of Air Pollution", dated April 1984.

- excess emission report analysis;
- examples of criteria and agency follow-up actions;
- entry of EER data and results of agency review into CDS and its CEMS Subset; and
- general review of CEMS data quality and source compliance with all CEMS requirements.

Figure 1, which depicts the agency's "Review and Use of CEMS Data," should facilitate the reader's understanding of the guidance.

The major objective of this guidance is to assist Regional Offices in proceeding expeditiously, and in a nationally consistent manner, with the review and follow-up of EER data from NSPS Subpart D and other source categories where the monitoring system is not the compliance method. The guidance intentionally permits a fair measure of flexibility in order to allow each agency to optimize its EER program implementation.

The guidance suggests that with the exception of Phases 1 and 2 of the EER analysis, the results of the agency's review of EERs are best handled in the same manner as any other surveillance data. In short, such data is conceptially similar to agency receipt of information such as a citizen's complaint, and therefore should be integrated directly into an agency's traditional surveillance/compliance program at a similar point in that process. In the situation where the agency has an ongoing enforcement action or case development against a source, the agency should consider adding potential CEMS violations or data to the case.

Experience has shown that the three most important areas for agencies to apply their CEMS program resources are in: (a) inventory development; (b) determination of source compliance with CEMS installation and operating requirements; and (c) review of EERs and Agency follow-up. It is recognized that between the initial operation of the CEMS and the submittal of an EER there are a number of intermediate activities which a source is required to perform, such as to demonstrate achievement of the performance specifications. However, by emphasizing these three areas of the EER program, the agency can make it clear to the source that the agency is interested in minimizing emissions through the source's proper operation and maintenance of its process and control systems. Although the agency needs to receive valid data, it is the source's responsibility to take action to assure the quality of the data. Therefore, the degree of the agency's involvement in the intermediary steps needs to be balanced against a more effective review and use of the EERs.

The guidance suggests that agencies initiate a three-phase EER review and follow-up program concurrently with the development of a thorough inventory of CEMS-affected sources and the determination of the compliance status of these sources with CEMS installation and operating requirements. Absence of a complete inventory should not preclude use of data presently available.

Although the subject technical guidance provides many of the details on how to implement an EER program, the comments received on the draft document indicated that additional, more specific technical information would be very helpful. Such information will be included in a forthcoming EER Users Handbook, to be issued in FY 1985.

II. Inventory Development and Determination of Source Compliance with CEMS Installation and Operating Requirements

As noted previously, inventory development and determination of source compliance with CEMS installation and initial operating requirements (§60.13(b)), though preliminary steps to an EER review, are two of the three most important activities an agency should implement when beginning its CEMS program. Upgrading of an agency's current inventory is important, but doesn't have to be completed before the agency begins to determine the compliance status of sources in its current inventory with CEMS installation and initial operating requirements or establishes a program to utilize available EERs.

Although such determinations are important because the timing of initial CEMS operation determines when the initial EER had to be submitted, experience shows that an agency can effectively begin to evaluate and follow up on EER data before it completes either the inventory or the compliance determinations.

To the extent that the agency is not certain that its CEMS inventory is current and complete, it should upgrade its inventory. There are a number of possible resources that may be useful in carrying out this task. They include:

- the current CDS and the CEMS Subset;
- the NSPS Subpart D CEMS regulations;
- "Power Directory-1983 - An Environmental Directory of United States Steam Electric Power Plants", by the Edison Electric Institute; and
- various types of State and Federal agency records (e.g., inspection and test observation reports, recent background reports associated with the development of the NSPS Subpart D (revision), Da and Db).

III. Excess Emission Report Analysis

The third of the three most important elements of CEMS program implementation is excess emission report analysis. (This document delays addressing any CEMS requirements dealing with activities which chronologically occur between initial operation of the monitor and source submission of EERs until after discussing EER review and follow-up procedures. Such information can be found in Section VI of the guidance).

As per §60.7, thirty days following the first calendar quarter during which the source installed and began operating its CEMS, it is required to submit its first EER to the agency. Thus, a source must submit EERs even if its monitor has not undergone or passed a Performance Specifications Test (PST). If the agency is not currently receiving EERs, it should request all of its CEMS-affected sources to submit them.

Experience indicates that once the CEMS is installed and operational, agency insistence on: (a) timely submission of the EER; (b) review and follow up of the data; and (c) discussion of the results with the source, provides a great deal of motivation for the source to operate and use its CEMS to minimize its emissions. Therefore, it is essential for the agency with primary EER responsibility to obtain, review, and follow up on the most recent EER from every source required to install CEMS.

The recommended analysis and follow up to the source-submitted EER is presented as a three-phase process in this guidance as follows:

- Phase 1 - initial review and summarization of EER data;
- Phase 2 - confirmation of Phase 1 results, targeting of sources for follow-up, and data input to the CEMS Subset of the CDS; and
- Phase 3 - follow-up comparison of CEMS data and other emission data, and potential recommendations for additional testing or compliance/enforcement actions.

All EERs must be subjected to Phase 1 and Phase 2 evaluations. Evaluations performed during these two phases are unique to CEMS data. Phase 3 of the EER program should represent a conventional agency follow-up to data which have identified a possible violator.

Experience has shown that each EER should be processed "sequentially" as it is received, as the EERs usually arrive at the agency individually and as they are usually assigned to different case engineers. Also, it appears to be most beneficial for the agency to enter the new compliance data into its CDS at major milestones during the 3 phases.

The phases are described in more detail below.

A) Phase 1 - Screening Assessment and Summarization of the Data

During the Phase 1 evaluation, the reviewer is to perform a preliminary evaluation of the data and to summarize the data into specific categories for subsequent entry into the CEMS Subset of the CDS. A few Regional Offices have found that this can be very effectively done by para-professionals or technicians and that it takes about an hour per EER. The following paragraphs provide additional details about Phase 1 activities.

1) Assess the completeness and general acceptability of the EER.

One should perform a general assessment of the EER. Items 1 to 5 on the "EER Reviewer's Checklist" are provided in Appendix 1 for the reader's convenience in completing this activity. Such an assessment should compare the EER with the following requirements excerpted from §60.7. While each item is required, it is important to remember that the key to the review and use of EERs is to obtain quickly sufficient data to determine the adequacy of a source's operation of its emission control system and to try to motivate sources to minimize their emissions and to remain in compliance.

(a) The source should submit EERs as follows:1/

(1) Within 30 days after the end of each calendar quarter, submit a written report of: (a) excess emissions (as defined in the applicable Subpart); and (b) monitor system performance.

(b) An EER is required every quarter, even if no excess emissions were recorded or if the CEMS had no downtime, and was not repaired or modified.

1/"source" includes NSPS Subpart Da units which must submit opacity monitoring EERs

(c) Each EER shall include:

(1) The magnitude (averaged during the excess period, including any conversion factor(s) used), date, start and ending times, nature, cause and corrective action taken for each excess emission; specific identification of each period of excess that occurred during startups, shutdowns and malfunctions of the affected facility; the nature and cause (if known) of the malfunctions and corrective actions taken.

(2) The date, start and ending times of each instance when the CEMS was inoperative (except for zero and span checks, etc.), and description of the nature, cause and corrective action taken for each such period.

(3) The number of days in a quarter (or percent of time) when the process was operating versus percent of time when the CEMS was operating and percent of time CEMS was not operating ((2) above) 2/

2) Summarize the Emission and Monitor Performance Data

Before the EER data can be entered into the CEMS Subset and effectively used, the data must be in a categorized and summarized form. To the extent that the EER data are not categorized and summarized by the sources in a manner consistent with the definitions, as shown in items 4 and 5 of Appendix 1 (e.g., startup, shutdown, process problems, monitors and non-monitor equipment problems), the agency reviewer must summarize the data manually. The four key parameters which must be summarized by reason code, are:

(a) total number of exceedance incidents;
(b) total duration of time that the standard was exceeded;
(c) total number of CEMS downtime incidents; and
(d) total duration of each CEMS's downtimes.

2/ Note: This item is only implicitly specified in §60.7. However, it is essential for agencies to know the quantity of CEMS downtime while the process was operating in order to determine the adequacy of the source's CEMS performance and the representability of the excess emission data reported in the EER.

Suggested reason codes and their definitions are presented in Sections VI and VII of Appendix 2. It should be noted, however, that these definitions are not official and are still being considered by EPA as part of a possible regulatory revision intended to obtain standardized summaries directly from the sources.

It is recognized that agency summarization of the EER data is the most resource intensive element of the Phase 1 analysis. However, it's completion is critical to the effective use of EERs.

B) Phase 2 - Verification of Phase 1 Results, Targeting of Sources and Data Entry into the Subset

The Phase 2 EER activities should be performed by an experienced compliance person. To date, agencies have relied upon a professional who was familiar with reviewing other compliance data. This part of the EER assessment is more complex than Phase 1 in that it involves: 1) completion of an internal check and concurrence with the Phase 1 results; 2) comparison of the EER data with agency targeting criteria (for example, see Section IV), and in some instances includes recommendations for additional agency evaluation of source-related data; and 3) supervision of EER data entry into the CEMS Subset of the CDS. Completion of these activities should be documented in items 6 and 7 of Appendix 1, for example, during Phase 2. Current experience indicates that these activities can be completed within about one hour. The following paragraphs delineate additional details about Phase 2.

1) Verification and Concurrence with Phase 1 Results

The Phase 2 reviewer should check the data analysis and summarization completed during Phase 1 in sufficient detail to permit the reviewer to concur with the results. It is expected that spot-checking of the Phase 1 results will usually suffice.

2) Comparison of EER Data with Targeting Criteria and Possible Recommendation of Additional Agency Evaluation of Source Data

Once the Phase 1 EER summary results have been concurred with, they should be compared to the agency's targeting criteria (see sample list of criteria and follow-up actions in Section IV). For instance, if the source reported exceeding the opacity standard for 2-5% of its operating time during the quarter, the agency might target it for a follow-up action, such as sending the source a letter requiring it to reduce its excesses by the next quarter. A second example is shown in Figure 2. There one can see that the relatively poor emission performance of three sources virtually "leaps off the page" compared to others in the same State. These three sources should be targeted for agency follow-up action.

One would expect that the EER review process would initially find most source's EER data indicating compliance, and therefore not causing the source to be targeted. However, as a "quality assurance" check on the agency's EER review procedures, and to verify the data, to the extent that resources permit, the agency should randomly target a few of these apparently complying sources for follow-up action.

3) Enter the Summarized Data and Notification to the Source

At least once a quarter, and more frequently if appropriate, each set of summarized data should be entered into the CEMS Subset of the CDS. Furthermore, it is essential to provide the source with a timely notification of the results of the agency's EER review (both positive and negative). This will help to promote better emission control and monitoring of operations by the source because they will be aware that the data are being scrutinized and will not want their EERs to trigger an agency follow-up activity such as an inspection or stack test. Furthermore, providing the results to the sources will improve the credibility of the EER process with the source.

C) Phase 3 - Conduct Agency Follow-up Activities

The Phase 3 analysis and follow-up will likely be performed on a relatively small fraction of an agency's sources, and is in general more comprehensive and more sophisticated than the activities performed in Phases 1 and 2. Once a specific source has been targeted as a possible violator (during Phase 2), the agency should proceed as it normally would whenever it has reason to believe that a source may be out of compliance. As with any conventional follow-up activity, Phase 3 may be performed in the office or in the field. It may include activities such as comparison of the EER results with other available data (e.g., malfunction and inspection reports, stack test results, and EER data), and compliance activities which result in the acquisition of new data. Furthermore, a Phase 3 assessment may result in a recommendation for initiation of an enforcement action. Therefore, it is suggested that a professional on the agency's compliance staff perform these activities.

The Phase 3 activities may result in one of the following:

- a determination that an "apparently complying" source, based upon conventional surveillance/ compliance monitoring data, was actually in violation of one or more regulations; or

- a determination that a source appearing to be a violator, based upon CEMS/EER data, was actually in compliance.

Regardless of the outcome, the agency's confidence in its compliance data for that source will be measurably enhanced.

IV. Example Targeting Criteria and Recommended Agency Follow-up Actions

The following example criteria and follow-up actions are based on a limited amount of Regional Office experience, mostly with EERs from large boilers. They are intentionally non-specific in order to provide a framework or "starting point" for each Regional Office to formulate its own criteria and recommended follow-up actions (in consultation with its States, as appropriate) specifically suited to its unique set of circumstances. It is suggested that an agency consider, among other parameters, the following things when developing its criteria for targeting sources for follow-up actions:

- staff size and expertise relative to the size and complexity of its responsibilities;
- availability of external resources (cooperating agencies, contractor assistance);
- current level and quality of agency knowledge of its source's emissions, control systems, processes, fuel alternatives, etc.;
- compliance and malfunction history of its sources;
- relative priority of the sources and the pollutants to be addressed by criteria; and
- technical and regulatory tools, limitations, etc. available to the agency.

Furthermore, it is appropriate for each agency to review its criteria and follow-up plans annually and to revise them, as necessary. By the end of FY 1985, EPA intends to review agency experience with EERs and this guidance, and to provide additional details and examples of criteria in an "EER Users Handbook".

A) General Comments on the Example Criteria

The following additional comments are relevant to understanding and using the example "Criteria for Action" and "Recommended Follow-up Actions" provided on the following pages.

- Of the three types of examples provided (i.e., Emission Performance, CEMS Performance and Administrative Problems), "Emissions Performance" is clearly the most important. However, the urgency and severity of follow-up to CEMS or administ ative problems should be controlled by the degree to which the CEMS or EER deficiency itself inh.bites interpretation and use of the data relating to emission exceedances. For example, major gaps in data, or gaps in data from a problem source, would warrant the strongest enforcement response. On the other hand, format problems presenting only a minor inconvenience to the reviewer would warrant a less stringent response.

- It is recommended that each agency begin its EER program with fairly simple, quantitative criteria and simple qualitative follow-up action recommendations. Later, as experience dictates, each agency might choose to establish more sophisticated and qualitative criteria.

- Whenever a detailed review of exceedances occurs, a similar review of CEMS downtime should also be performed. Check next quarter (whether or not the threshold point is reached) to determine whether similar problems recurred and whether the source's previous corrective action was acceptable.

- Emission and monitoring criteria for gaseous emissions, comparable to the opacity examples, should be developed by each agency. There are probably enough data currently available for agencies to develop such criteria.

- The example criteria provided are not intended to suggest that an agency's criteria should or could all be precisely definable (e.g., 2% monitor downtime). The criteria provided were for illustrative purposes. For instance, perhaps a source's normal emission and monitor performance should also be taken into account in the criteria.

- Because this document is primarily based on agency experience with large power boilers, EER data from other types of sources should be analyzed sufficiently in order to determine appropriate targeting criteria. An annual review of these criteria should be conducted to assess the need for modifications.

- The operating experience of opacity and SO_2 monitoring systems should be reviewed annually to determine whether different action threshold points are justified.

- Approximately a year of operating experience with NO_X and TRS monitoring systems (high quality historical data is acceptable) should be evaluated when determining specific threshold points for these CEMS.

Example Criteria and Recommended Follow-Up Actions

(Opacity Emission Performance Problems)

Criteria for Action*	Recommended Follow-Up Actions
Emissions below both high and low threshold points.	Conduct a random "quality assurance" review of some EERs for exceedances each quarter.
In the first quarter after problem was noted, emissions were below the low threshold point.	Check next quarter to determine whether or not similar problems have recurred and if corrective action was acceptable.
(a) Total duration of exceedances exceeds the low threshold point selected by the agency for the source or source category (two percent of the total source operating and monitored time, and certain other factors, have been used successfully by Region V for certain power plants). (b) Total duration is less than the agency's low threshold point, but there is a significant increase in the number or duration of exceedances. (c) Detailed examination of the EER discloses unacceptable types of exceedances or reasons for exceedances.	(a), (b), (c), Initiate the lowest level of agency action (e.g., a more thorough analysis of the EER by an engineer). This may result in a warning by telephone or letter being sent to the source relating to its excess emissions.

- Continued on next page -

*These were placed in a "relatively" ascending order of severity/importance

Example Criteria and Recommended Follow-Up Actions

(Opacity Emission Performance Problems) - Continued

Criteria for Action*	Recommended Follow-Up Actions
(a) Total duration** exceeds a high threshold point (five percent of the total source operating and monitored time and certain other factors, have been used successfully by Region V for certain power plants). (b) Total duration is less than this high threshold point, but there has been a significant increase in the number or duration of exceedances.	(a),(b) Initiate a moderate level of agency action (e.g., a more thorough analysis of the EER and other compliance information by an engineer/technician and compliance staff). This may result in additional surveillance activity or a conference with the source. An immediate inquiry into specific exceedances should be conducted.
Recurrence of same or similar problems from prior reporting periods.	Proceed with more rigorous follow-up action. This should also depend on the severity of excess emissions and other relevant targeting factors (e.g., size, compliance history)

*These were placed in a "relatively" ascending order of severity/importance

**Summary data from EERs or reviewer's checklist (see Appendix 1)

Example Criteria and Recommended Follow-Up Actions
Opacity and SO_2

(CEMS Performance Problems)

Criteria for Action *	Recommended Follow-Up Actions
"Random" EER follow-up review done on EER (e.g., when CEMS downtime does not exceed the high or low threshold points) to determine whether there was questionable CEMS "downtime".	Regardless of results, the source should at least be notified that a follow-up review was performed. Perhaps a telephone report would suffice unless a major problem was identified.
CEMS downtime exceeds the low threshold ("W"-opacity or "X"-SO_2 percent) point.	The specific reasons should be examined and if it is determined that such performance is unacceptable, the source should be directed to take corrective action. The source should be notified (by telephone should suffice) of the follow-up review regardless of the results.
CEMS is out of service for more than the high threshold ("Y"-opacity or "Z"-SO_2) percent of the total operating time of the source during any given quarter.	Similar to above, but a written report would be appropriate.
Excessive CEMS downtime reported for a second quarter; or exceedance "caused" by CEMS	Conduct an inspection and/or require the source to repeat its demonstration of achievement of the CEMS performance specifications.
Continuing problems with CEMS for at least three quarters	Proceed with more rigorous follow-up action. The urgency and severity of enforcement would be controlled in part by the degree to which CEMS problems interfere with effective source surveillance. Other targeting factors, particularly excess emission performance should also be considered.

*These have been placed in a "relatively" ascending order of severity/importance

Example Criteria and Recommended Follow-Up Actions

(Administrative Problems With EERs)

Criteria for Action*	Recommended Follow-Up Actions
EER contains one or more reporting deficiencies	In every case, call or send a written critique of the EER relative to EER requirements. Require corrective action by next quarter.
EER not received by 45 days after quarter ends	In every case, call or write the source requiring EER submittal within 15 days.
EER contains the same or similar deficiencies for a second time	Telephone follow-up, confirmed by letter, stating deficiencies and requiring corrective action in the next quarterly report.
EER contains the same or similar deficiencies a third time	Proceed with more rigorous follow-up than the previous time (depending in part on degree these problems impede agency's ability to conduct source surveillance).

*These have been placed in a "relatively" ascending order of severity/importance

V. Entry of EER Data into the CEMS Subset of CDS

Keeping the agency's data base current is very important. Particular emphasis is required with respect to the CEMS - related data. Keeping the data system current will not only help a specific agency to manage its resources and keep its sources in compliance, but will also add significantly to the rather limited data base available to other agencies. This data will provide very important support for activities such as establishing criteria for targeting sources, deciding against whom/when to take enforcement actions, etc. In addition, what is recorded by the end of a quarter will represent the agency's baseline for implementing the program in the next quarter. Lastly, the historic record created by several quarters of data is useful for time-series and trend analyses (e.g., how much SO_2 is emitted from specific sources and during specific atmospheric conditions).

Information concerning specific data requirements and entry procedures are presented in the CEMS Subset Users Guide. In addition, training opportunities concerning use of the Subset are available.

VI. Review of CEMS Data Quality and Source Compliance with All CEMS Requirements

As discussed in Section I of this guidance, it is recommended that an agency begin implementing its CEMS/EER program by primarily concentrating on: (a) inventory development; (b) determination of source compliance with CEMS installation and operating requirements; and (c) review of EERs and follow-ups. The activities addressed in this guidance were purposefully ordered in a manner consistent with that recommendation. Therefore, the activities which chronologically may occur at a source between the initial operation of the CEMS and source submission of EERs (e.g., performance specification test) have yet to be addressed. This Section addresses those items.

Whenever the agency chooses to evaluate the data quality and a source's general CEMS compliance, experience indicates that this can be accomplished most effectively by determining each source's compliance with all of the CEMS requirements, rather than through sequential assessment of the compliance of a number of sources with a single CEMS provision. Thus, by reviewing a complete set of data from a single source (e.g., inspection and performance test reports, EERs), it is easier to develop a more complete picture of the quality of a source's emission and monitoring performance, as well as to detect any inconsistencies within the data.

The agency should document (see Appendix 3 for an example checklist) each source's general compliance with the following applicable CEMS requirements, summarized below for NSPS sources (similar requirements may exist for SIP and PSD sources):

A). The source shall install 3/ and operate a CEMS prior to conducting the initial performance test - §60.13(b),

(1) Note - although some coal-fired, non-FGD, Subpart D - sources have not installed SO_2 CEMS while they await EPA's resolution of the "reserved" §60.45(d) paragraph, these sources have always been required to implement the opacity and NO_X CEMS requirements contained in §60.13(b).

B). The source shall locate the CEMS such that the measurements are representative of emissions - §60.13(f).

C). The source, after giving the agency at least 30 days notice, shall demonstrate achievement of the performance specifications through a performance specifications test (PST) - §60.13(c).

(1) A PST (for a CEMS of the same pollutant) is required during, or within 30 days after each performance test required under §60.8. If a source performance test was done without obtaining concurrent CEMS data, the test should be repeated, preferably concurrently with the PST.

(2) Note -- an initial PST is required for all CEMS, even those for which contracts were signed before September 11, 1974 - §60.13(c)(3).

(3) The source is required to submit the results (demonstrating achievement of the performance specifications) of such tests to the agency within 60 days after completion of the PST.

D). The source shall perform quality assurance checks specified by the Administrator, such as at least daily zero and span drift checks and the adjustments contained in §60.13(d).

3/ See Appendix 4 for a list of CEMS-affected NSPS source categories and their specific CEMS requirements.

E). The source shall demonstrate that except for monitoring system breakdowns, calibrations, etc., the CEMS are capable of continuous operation and can meet minimum cycle times as follows:

(1) Opacity CEMS - sample and analyze opacity once in each successive 10-second period - §60.13(e)(1).

(2) NO_X, SO_2, CO_2 and O_2 CEMS - sample, analyze and record the parameters, once in each successive 15-minute period - §60.13(e)(2).

F). The source shall perform data reduction as follows:

(1) Opacity CEMS - reduction of all data to 6-minute averages (based on at least 36 equally spaced data points per 6 minutes) - §60.13(h).

(2) Gas CEMS - reduction of all data to 1-hour averages (based on at least 4 equally spaced data points per hour) - §60.13(h).

G). The source shall maintain (for at least two years) copies of all CEMS performance evaluation and quality assurance/control data, emission data, performance test data, CEMS and control system maintenance records, etc. - §60.7(b) and (d).

H). The source shall submit quarterly EERs to EPA and (if delegated) to the State agency - (§60.4(b)).

Please refer to 40CFR Part 60 for the specific language on each of these requirements.

VII. Contacts for Future Technical Assistance, Comments, and Additional Copies of the Guidance

As agencies implement their CEMS/EER program, EPA anticipates that there may be a continuing need for technical assistance in implementing the guidance, answering technical questions, and receiving comments and suggestions. Additional copies of the guidance may also be needed.

Please direct these technical questions and requests to Louis Paley at (202) 382-2835; or for CDS related items, please contact Howard Wright at (202) 382-2826; or write to either Mr. Paley or Mr. Wright at -

U.S. EPA
Stationary Source Compliance Division (EN-341)
401 M Street, S.W.
Washington, D.C. 20460

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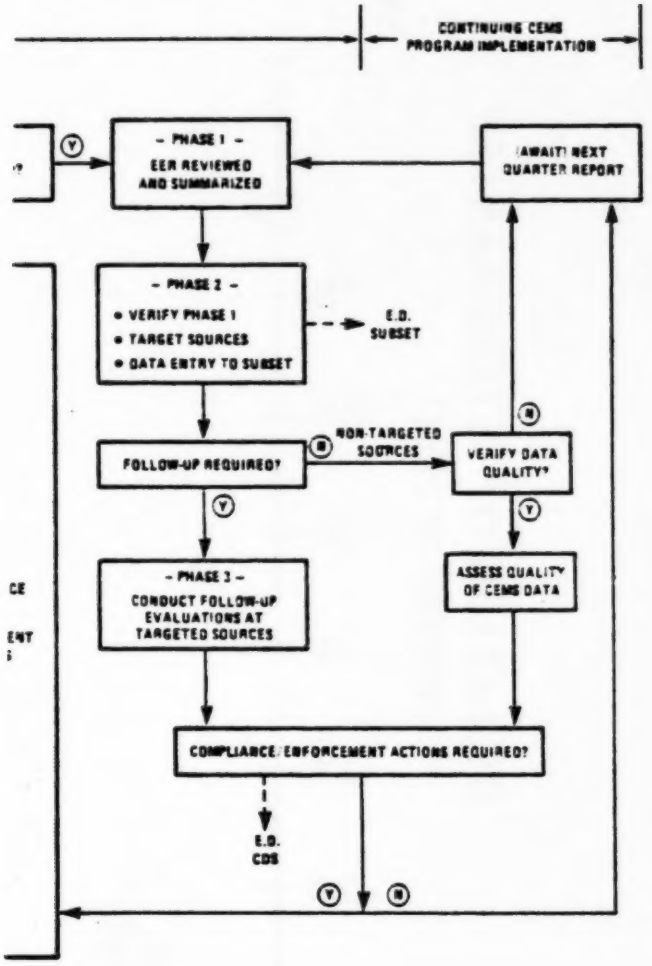
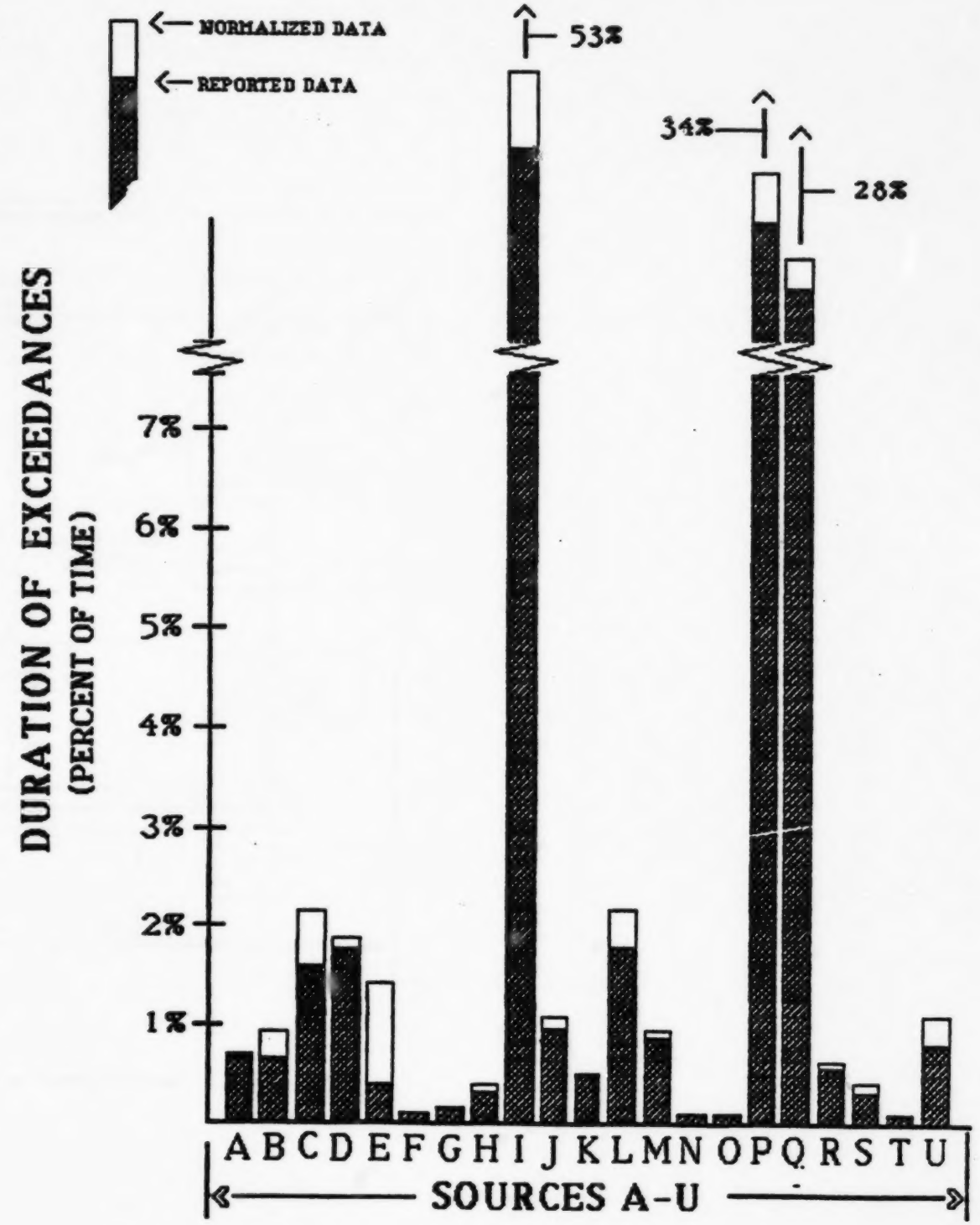


FIGURE 1. AGENCY'S REVIEW AND USE OF CEMS DATA

Figure 2 - Example of Sources Which
Should be Targeted for Follow-up Action



Sample Form
10/3/84

EER REVIEWER'S CHECKLIST
(40 C.F.R. Part 60, Subpart D)

APPENDIX A-1

Phase 1 Review _____ Name _____ Date

Phase 2 Review/
Subset Data Entry _____ Name _____ Date

Phase 3 Review/
CDS Action Entry _____ Name _____ Date

1. Company _____ _____ Quarter _____ Year

Plant/Unit _____

2. Timeliness (Must be postmarked within 30 days of quarter)

(a) Date Postmarked _____ (b) Days Late _____

3. Completeness[1] (For EERs which cover multiple monitors, specify monitor when noting problem.)

	No Problem	Problem (Describe)
Excess Emissions (EEs) Information		
(a) Data Reported in Units of Applicable Standards		
(b) Date and Time of Commencement		
(c) Date and Time of Completion		
(d) Magnitude		
(e) Conversion Factors Used		
(f) Identification of EEs Caused by Start-up, Shutdown, or Malfunction		
(g) Nature and Cause of Malfunction		
(h) Malfunction Corrective Action or Preventive Measures		
(i) Affirmative Statement of No EEs		
CEMS Performance Information		
(a) Date and Time Identifying Specific Periods During Which CEMS Was Inoperative		
(b) Nature of System Repairs or Adjustments		
(c) Affirmative Statement of No Period of Downtime, Repair or Adjustment (include no CEMS modifications)		
Source Operating Time [1]		

[1] A revision of reporting requirements to require a summarization of data, categorization of excess emissions and CEMS problems according to new uniform categories, and reporting of source operating time is now under consideration. Although not specifically required, source operating time has been included on this sample form because it is necessary to allow for data analysis included in this checklist.

4. Data Summary for Opacity EERs

(a) Opacity CEMS Performance

Causes of CEMS Downtime*	Number of Incidents	Total Downtime (Hours)	Percent Unavailability[2]
Monitor Equipment Malfunctions			%
Non-monitor CEMS Equipment Malfunctions (e.g., computer, data recorder, etc.)			%
Calibration/QA			%
Other Known Causes			%
Unknown Causes			%
Total			%

[2] "Percent unavailability" is calculated by the following formulas:

CEMS Downtime[4] During Source Operating Time (Hours)	÷	Source Operating Time (Hours)	x 100 =	Percent Unavailability

Where:

Time in Quarter (Hours)	—	Source Down-time (Hours)	=	Source Operating Time (Hours)

(b) Opacity Emissions Performance (Data Reported as Consecutive 6-minute Periods; Calculate Duration in Hours to Nearest Tenth)

Causes of Excess Emissions*	Number of Incidents	Total Duration (Hours)	Percent of Operating Time (Normalized)[3]
Process Start-up/Shutdown			%
Sootblowing			%
Control Equipment Failures			%
Process Problems			%
Fuel Problems			%
Other Known Problems			%
Unknown Causes			%
Total			%

[3] "Percent of Operating Time (Normalized)" is calculated by dividing Total Duration by the following Normalization Factor, then multiplying the result by 100.

Time in Quarter (Hours)		— Source Downtime (Hours)		— CEMS Downtime[4] During Source Operating Time (Hours)		= Normalization Factor	

[4] Assume all reported CEMS downtime occurs during periods of source operation unless explicitly stated.

* Proposed definitions for these categories appear in "Technical Guidance on Agency Review of Excess Emission Reports and Follow-up Actions," Appendix 3.

5. Data Summary for SO_2 or NO_x ERRs (Use Separate Forms for Each Monitor)

Type of Pollutant _____

(a) CEMS Performance (Includes Aggregate Downtime for Pollutant and Diluent Monitors)

Causes of CEMS Downtime*	Number of Incidents	Total Downtime (Hours)	Percent Unavailability[2]
Monitor Equipment Malfunctions			%
Non-monitor CEMS Equipment Malfunctions (e.g., computer, data recorder, etc.)			%
Calibration/QA			%
Other Known Causes			%
Unknown Causes			%
Total			%

[2] "Percent unavailability" is calculated by the following formulas:

CEMS Downtime[4] During Source Operating Time (Hours)	÷	Source Operating Time (Hours)	x 100	=	Percent Unavailability

Where:

Time in Quarter (Hours)	—	Source Downtime (Hours)	=	Source Operating Time (Hours)

(b) EMISSIONS PERFORMANCE (Data Reported as Consecutive 3-Hour Periods)

Causes of Excess Emissions*	Number of Incidents	Total Duration (Hours)	Percent of Operating Time (Normalized)[3]
Control Equipment Failures			%
Process Problems			%
Fuel Problems			%
Other Known Problems			%
Unknown Causes			%
Total			%

[3] "Percent of Operating Time (Normalized)" is calculated by dividing Total Duration by the following normalization factor, then multiplying the result by 100.

Time in Quarter (Hours)		— Source Downtime (Hours)		— CEMS Downtime[4] During Source Operating Time (Hours)		= Normalization Factor	

[4] Assume all reported CEMS downtime occurs during periods of source operation unless explicitly stated.

* Proposed definitions for these categories appear in "Technical Guidance on Agency Review of Excess Emission Reports and Follow-up Actions," Appendix 3.

6. EER Data Summary and CDS/CEM Data Coding Checked: _____ (Name) _____ (Date)
(Also sign second line, page 1 of Checklist.)

7. Should this EER be Reviewed for Possible Agency Follow-up? (Compare EER data with criteria for follow-up.)

Yes/No: _____

Comments: _____

(Indicate type of monitor(s) and problem(s), applicable follow-up criteria and possible follow-up.)

8. Recommendations for Follow-up Activity Based on Detailed Review of EER and Other Compliance Information:
(Indicate recommended agency action with check(s) and/or appropriate letter(s) and comments below.)

Follow-up Action	Emissions Problems			CEMS Problems			Timeliness	Completeness
	Opacity	SO_2	NO_x	Opacity	SO_2	NO_x		
No Action								
Target Source for Detailed EER Review Next Quarter								
Contact State								
Defer to State								
Contact Source a. Telephone source b. Meet with source c. Request add. information d. Request add. reporting e. Request corrective action f. Request add. testing g. Request alt. monitoring h. Request specific O&M/QA procedures i. Other (Specify)								
Target for Additional Surveillance a. VEO b. LIDAR c. Inspection d. Audit e. Compliance test f. Other (Specify)								
Enforcement a. Warning Letter b. § 113 NOV c. § 113 Compliance Order d. § 120 Notice of Noncompliance e. Initiate civil action f. Other (Specify)								

Comments: _____

_____

9. Action Coded and Entered in CDS: _____ (Name) _____ (Date)
(Also sign third line, page 1 of Checklist.)

Summary of Agency Survey of Recommendations for Revising EER Requirements and for Using EERS

I. INTRODUCTION

The following recommendations are the result of a study completed in March, 1984, which identified and evaluated appropriate elements of an agency EER review and follow-up program keyed to surveillance targeting. It included a survey of existing Federal and State EER programs and the identification and evaluation of major problems and constraints that inhibit the effective implementation of those programs. It also included the design of optional review procedures and a test review of selected EERS in two States. Following this review, project participants met with State and EPA regional representatives to discuss the advantages and disadvantages of specific review options, and to identify areas in which specific EPA guidance is needed. Recommendations reflect a perceived need for certain EPA action along with a determination that such action is feasible.

II. AN EER SUMMARY SHOULD BE REQUIRED

(A) Explanation

EPA should require that a one-page EER summary be prepared by each source required to submit an EER for EPA review. This summary should be prepared according to a uniform format, applicable nationwide, and steps should be taken to ensure consistency of content. Until at least the source demonstrates that it has a high-quality emission control and CEM program, the summary should be submitted in addition to, and not in lieu of, the "traditional" report of the individual exceedances and other reportable incidents. In the cases where only summary reports are subsequently required, the agency should periodically audit the source's complete EER.

(B) Major Considerations

- It will facilitate a quarterly review of EERS by Agency Staff. An EER summary will facilitate EER review by substantially shortening the amount of time necessary to screen the EER for a determination of the need for follow-up. This is especially useful for an agency which may have a legitimate shortage of staff time to commit to EER review, and which is reviewing a substantial volume of EERs reporting a substantial number of exceedances or monitor problems.

- It will facilitate a comparative analysis of EER data. An EER summary should provide an effective basis for tracking the overall performance of a source from quarter-to-quarter and identifying both gradual and extraordinary changes in emissions over time. This tracking might be performed for every source submitting EERs or only for certain sources that have been targeted for more intensive surveillance.

- It will not result in a significant new burden on sources currently filing EERs that comply with NSPS requirements. It is believed that preparation of a summary will impose only a negligible burden on most sources with computer analysis capability, since in most cases only a minor modification in software will be required. The costs will be more significant in cases where the software is permanently installed or "hard-wired". In instances where excess emissions data is tablulated, analyzed and reported manually, summarization should still require only a minor additional effort compared to the total time spent in EER preparation.

- It should help some sources use the data for compliance management purposes. A summary should also provide the environmental control manager at sources who are not currently tracking EER trends a convenient tracking mechanism for internal control purposes.

- Submission of the summary without the underlying report. Some agency spokespersons have indicated a preference toward receiving just the summary, then requesting the underlying EER only if needed. The recommended approach is to receive the entire (current) EER for some minimum period, then, the agency might reduce the reporting requirement for sources with clearly excellent records, subject to periodic EER audits.

- The preferred mechanism for establishing this requirement is through an amendment to the reporting requirements in 40 C.F.R. § 60.7. This approach is preferred over all alternative mechanisms (e.g., the use of individual § 114 letters or the SEA process), by agency and source personnel alike. The consistency and formality of rulemaking provides significant support to the requirement and reduces the probability of, or reticence on the part of, agency and industry personnel to make the change.

- o The recommended summary will require changes in how the underlying report is prepared at most facilities. There are basic differences in EER content from State to State, and from source to source in many of the States. No survey was conducted to determine the precise nature of the impact of these changes on specific sources. State representatives generally agreed, however, that the impact would be minor and not unexpected. As indicated by agency staff in Minnesota and Colorado, most sources are accustomed to receiving agency requests for information according to formats that periodically change - this has become an ordinary aspect of doing business with the government. Although some objection is encountered, there are usually no serious confrontations where, as in the current situation, the reasons for the change are logical and not perceived to be artitrary, and the net effect is to create a more efficient, uniform and stable reporting program.

III. THE EER SUMMARY SHOULD INCLUDE THE TOTAL NUMBER OF EXCESS EMISSION INCIDENTS AND THE TOTAL DURATION OF ALL EXCESS EMISSIONS

(A) Explanation

The number of incidents should include each continuous time period in which an excess emission occurs, and the total duration should include the sum of the time periods associated with all incidents. Periods during which a permissible exception may apply should be reported as any other excess emission.

(B) Major Considerations

- o Among available options, this appears to be the most useful and efficient. Other summary options are either not as effective in terms of providing a useful targeting aid or add a level of complexity without a corresponding benefit. These options include:

  -- Incidents only. This approach is not as useful because the number of incidents alone will not always provide a fair indication of the magnitude of control problems at the facility; incidents may be expected to vary in duration.

-- Incidents and duration. This is the recommended approach. The number of incidents will allow for quick evaluation of the frequency of excess emission problems at a facility; and the total duration will allow for a quick evaluation of the overall magnitude of the problems. Incidents are defined in terms of a continuous period of an excess emission because NSPS regulations require reporting on this basis. This does not account for the possibility that a single control problem will be summarized as several incidents (if the problem results in intermittent exceedances); however, the extent of any specific control problem may be further ascertained by reviewing the underlying report. As such, consideration of the number of incidents will still be effective as a screening aid, since any bias that is introduced will usually exaggerate the number of incidents and therefore not tend to restrict further inquiry into the underlying report.

-- Incidents and duration qualified by the severity of the exceedance. This approach takes into account the extent to which each reported exceedance actually exceeds the applicable standard and therefore provides a truer indication of the actual pollution associated with excess emissions during the quarter. However, as a screening mechanism it provides no significant benefit beyond screening simply on the basis of the number of incidents and the total duration of excess emissions. The simpler screening approach contains an assumption that all exceedances are significant; this can be verified, if necessary, by reviewing the underlying report.

o Current summary and analysis techniques do not usually track the frequency of excess emission incidents. Most, like EPA's CEM Subset of the CDS, look only at duration. Thus, a new review criterion will be introduced. It is believed that this is justified to ensure that sources with numerous short-term exceedances are not overlooked when targeting for EER follow-up.

- o Periods during which an exception applies should not be excluded. The purpose of the summary is to aid in screening for further review and follow-up. For this reason no excess emission should be omitted on the basis of an independent source determination that it is excusable.

IV. THE EER SUMMARY SHOULD INCLUDE INFORMATION ALLOWING FOR APPROPRIATE NORMALIZATION OF REPORTED DATA

(A) Explanation

This information should be sufficient for agency staff to determine the total source operating time, the total CEMS operating time, and the precise degree of overlap (source operating time when the monitor is down and the monitor operating time when the source is down).

(B) Major Considerations

- o A source with relatively few exceedances will not be overlooked for further evaluation, if emission data has not been obtained for a significant portion of the quarter. This will allow for the simplest meaningful determination of whether reported exceedances are significant in terms of the total source and monitoring operating time.

- o What if the monitor is up but malfunctioning? Clearly this would affect the usability of the data in many circumstances. It is recommended where the facility feels that CEM performance has affected the quality of exceedance data that this be clearly indicated in the summary.

- o A problem exists in the interpretation of opacity data that has been gathered during source downtime. Many agencies require that sources continue to record and report opacity data during a source outage. Sometimes there are significant opacity exceedances during these outages. It is recommended that this data be summarized separately, so that there is a consistent basis for comparison of uptime data from source to source.

- o Further normalization is not considered warranted. It is possible to normalize the data further to account for production factors (e.g., megawatts produced during the reporting time period), control equipment performance parameters, and an ever-increasing level of detailed information that ultimately zeros in on the actual volume of particulate emissions represented by the recorded opacity, and a calculation of the severity of excess emissions during the quarter. It is felt that this additional level of detail is not warranted for the purpose of conducting a simple screening program. Individual agencies may want to require additional summarization to suit their own targeting needs.

V. THE EER SUMMARY SHOULD INCLUDE A BREAKDOWN BY POLLUTANT OF EXCESS EMISSION INCIDENTS AND DURATION WITHIN CERTAIN REASON CATEGORIES

(A) Explanation

Recommended categories include start-up/shutdown, soot-blowing, control equipment failure, process problems, fuel problems, other known causes (see definitions below), and unknown causes. The same format could be used for all EER pollutants: opacity, SO_2, NO_X, and TRS.

(B) Major Considerations

- o A simple breakdown into general categories will allow for a more effective evaluation of the general types of problems experienced during a quarter at a particular facility. For example, excessive exceedances attributed to start-up and shutdown at a facility may require no further review of specific incidents noted in the underlying EER, and satisfactory follow-up may be limited to some form of off-site contact. Excessive exceedances attributed to equipment failure, on the other hand, may justify a more thorough review of the specific incidents and may ultimately warrant a site visit.

- The selected categories reflect the most common groups of reasons given for excess emissions. More precise groupings are possible, and are even preferred by many agencies (additional categories usually describe equipment and operator failures in greater detail and often include other categories designed to define excusable exceedances, e.g., excusable malfunctions and maintenance). For purposes of this guidance, however, it is recommended that a very simple selection be adopted as a minimum; then, if specific agencies want to require further summarization, they may do so independently.

- The recommended categories change and expand those currently summarized in the Subset. The "other known causes" category is needed to ensure that all excess emissions are included in the summary. The "fuel problems" category is needed for SO_2 emissions, since it is the most common reason for SO_2 exceedances. "Equipment failure" has been redefined as "control equipment failure" to allow for ease in distinquishing "process problems," which should be added as a new category. Adding these categories may inhibit the comparison of new summary data to old summary data in many instances (it is not clear how extensive this inhibition will be); however, this seems justified to ensure that future comparisons will be based on all of the data and will include the basic reasons for exceedances. At some future time EPA may wish to reevaluate the summary categories for specific pollutants or source categories and make changes that are appropriate in view of the actual experience.

- Potential inaccuracies due to source summarization. Some concern has been expressed that summary categories are not meaningful because either source operators do not really know the reason for an exceedance and simply put down what seems to be a convenient explanation or they cannot make the known reason fit into one of the available categories. Neither concern seems to be a valid reason for foregoing the proposed summarization. First, the small number and very general nature of the proposed reason categories should make the selection easier -- this may also be improved by adopting a uniform definition of each reason (the

recommended reason categories are not considered to be controversial). Second, an "unknown" category is provided for persons who really do not know why the exceedance occurred (it is a criminal offense under § 114 of the Clean Air Act to intentionally misrepresent such data). Although there is some likelihood for error in categorization, such errors should be discoverable through EER review and corrected through simple follow-up.

- o Sending an inappropriate signal to sources. Concern has been expressed that categories should be limited to NSPS exceptions and possibly additional exceptions typical of those included in most State regulations. Other categories may have an adverse effect because sources will key to those specific problems and tend to ignore the importance of categories not specifically mentioned. In response to this concern, it is felt that categories should be selected primarily for the purpose of management assistance, and that a logical breakdown according to the most frequently reported reasons will be most useful. Such a breakdown should not result in an inappropriate signal to sources, if the agency in fact conducts a diligent review and follow-up program.

VI. THE REASON CATEGORIES SHOULD HAVE STANDARDIZED DEFINITIONS

(A) Substantial confusion exists among agencies and sources on the definition of reason categories. This confusion may be corrected and should be eliminated in future guidance. The following are proposed definitions for each reason category:

- o "Startup" as defined in 40 C.F.R. § 60.2 means "the setting in operation of an affected facility for any purpose." If certain excess emissions during startup are caused by a control equipment failure or a process problem, that portion of the exceedance should be reported as a control equipment failure or a process problem. All other excess emissions during startup should be reported under "startup/shutdown," even through there may have been some additional intervening cause.

- "Shutdown" as defined in 40 C.F.R. § 60.2 means "the cessation of operation of an affected facility for any purpose." It applies to the process of shutting down and not to a period of downtime after the completion of this process. The same qualification for excess emissions due to equipment failure during startup also applies during shutdown.

- "Sootblowing" refers to the periodic removal of soot, slag and/or fly ash from the firebox walls or the tubes of fuel-burning equipment by the use of compressed air, steam or water. (Delaware Air Pollution Regulation No. 1, § 2.)

- "Control Equipment failure" means any on-site control equipment failure. It does not include fuel or conveying equipment, or boiler or other industrial process equipment. It is intended to cover all failures whether or not they are excusable or inexcusable as malfunctions under 40 C.F.R. § 60.2, and even though the underlying reason for the failure is not known.

- "Process Problems" are intended to cover on-site equipment failures other than control equipment. Operational problems (e.g., load change), would also be covered. When distinquishing between process and control equipment, any equipment necessary for the process would be considered process equipment, even though it may have a role in emissions control (e.g., the I.D. fan).

- "Fuel problems" are intended to cover any problem relating to the quality of the fuel ultimately burned at non-FGD facilities. Blending or cleaning problems would also be characterized as "fuel problems," as would the use of high sulfur fuel because of an interruption in the supply of complying fuel, or because of a supplier's error, or an error in coal sampling and analysis results, etc.

- "Other known causes" are intended to cover all known causes of excess emissions not already covered. An example is excess emissions during control equipment maintenance.

- o "Unknown cause" is intended to apply to all excess emissions for which the operator must guess at the reason (even though his guess might be a good one). It would not apply to an equipment failure even though the reason for failure is not known.

- o The issue relating to malfunctions. Currently 40 C.F.R. § 60.11(c) excuses a source for non-compliance with opacity standards during malfunctions; however, § 60.11(d) requires that such a source must still comply with good air pollution control practices to minimize emissions. No specific summary category for malfunctions has been selected; instead, all control equipment and process problems will be included whether or not they may be excusable. This should avoid potential confusion due to differences in opinion about what constitutes an excusable malfunction. The net effect should be to provide EPA unrestricted information to help screen for potential malfunction problems. Effective implementation of § 60.11(d) in this regard will normally require further review of the underlying report, and ultimately, communication with the source.

VII. THE EER SUMMARY SHOULD ALSO INCLUDE SIMILAR INFORMATION AND CATEGORIES FOR THE CEMS SYSTEM

(A) Explanation

Information would include the total number of incidents during which the monitoring system is out-of-service or malfunctioning, the total duration of such incidents, information allowing for appropriate normalization of reported data, and a breakdown of this information according to the following reason categories defined below: monitor equipment malfunction; non-monitor equipment malfunction; other known cause; and unknown cause.

(B) Major Considerations

- o All of the same considerations that apply to summarization of exceedance data apply to summarization of monitoring system data.

(C) The following are proposed summary categories for monitor performance data.

- o "Monitor equipment malfunction" refers only to the monitor equipment, and not to accessory equipment such as the computer analyzer or the strip chart recorder. "Malfunction" refers to any period during which the monitor is not operating or is producing inaccurate data, except during periods of calibration, maintenance, or other quality assurance activities.

- o "Non-monitor equipment malfunction" refers to all equipment other than the monitor equipment that are necessary to transfer, analyze and record data from the monitor equipment.

- o "Quality assurance" refers to any period during which the monitoring system is out-of-service for the purpose of calibration, maintenance, or other quality assurance related activities. Corrective action immediately following a malfunction (detected during the quality assurance evaluation), however, should be classified under the appropriate malfunction category.

- o "Other known cause" is intended to cover all other known reasons for monitoring downtime or inaccuracy.

- o "Unknown cause" is intended to cover circumstances in which there is inaccurate or no data without an apparent explanation. If a data recorder fails and produces inaccurate data, and the reason for failure is not known, this would be categorized under "non-monitor equipment malfunction." However, if data is clearly inaccurate, and a data recorder failure is suspected but cannot be determined, it should be classified as "unknown cause."

VIII. REVISION AND AGENCY RELIANCE ON THE CEM SUBSET OF CDS

(A) <u>Explanation</u>

Currently the Subset does not include the same breakdown of CEMS performance categories. This additional analytical capability will be useful to EPA as it enters a new phase of reliance on CEMS as a continuous compliance targeting aid. This capability would be substantially enhanced by also providing sorting capability according to monitor brand.

The minimum EER summary information described above should be entered into CDS for all NSPS and any other source required to submit EERs to EPA. EPA should perform this task until it is taken over by each State.

(B) Major Considerations

- The CEM Subset will provide a useful reference for EPA. CDS provides a useful source of data for defining compliance experience on a categorical basis. As such, it should facilitate compliance program planning at the federal level, by enabling EPA to target sources, localities and States where compliance problems are more extensive.

- The CEM Subset should be revised to include the minimum summary information indicated in the above recommendations. This would include a summary of incident frequency, information permitting normalization of data, and a revision of reason categories for exceedances and CEMs problems. In addition, data analysis functions and screening according to pre-determined targeting criteria should be added. These changes will facilitate EPA use of the Subset for more effective planning and targeting.

- This will require a new effort on the part of most EPA Regional Offices, but the burden should be relatively insignificant. The effort will be largely subsumed by the more general task of establishing and conducting a new EER review program; data review and analysis for the latter objective should also accomplish the former. Resources can be saved by delegating the job to a para-professional. Moreover, the existence of an EER summary should make the effort substantially easier.

- In most Regional Offices and States the receipt of summarized data will not result in an initial time savings for EER review. Individual EERs will usually be reviewed in any case; CDS will provide an additional, rather than an alternative, evaluation capability. However, this may change in the future after the CEM Subset of the CDS is programmed to allow for more sophisticated data analysis, and as agencies begin to adopt targeting practices that include the more sophisticated analysis.

- o Many States will not use the system for targeting. Many States that have highly experienced inspectors with a long-term knowledge of sources and a fairly simple targeting program, are not interested in using CDS for EER evaluations. However, source EER summarization in a format convenient to CDS may resolve some State concerns about the effort involved, as well as the difficulty of ensuring the quality of data analysis in independent local or State regional offices. The Subset may also serve as an effective check for the inspector and should prove to be an efficient aid in the transfer of institutional knowledge to new inspectors.

IX. A UNIFORM REPORTING FORMAT SHOULD BE ESTABLISHED FOR NSPS SOURCES

(A) Explanation

The format should be the same for all sources and should be designed to ensure that EER summary elements are clearly indicated on an incident-by-incident basis. In addition, the uniform format should be adaptable to requests for additional information from specific agencies.

(B) Major Considerations

- o A uniform format will promote consistency in content since much of it is controlled by the reporting format. Currently received formats vary so significantly from source to source and State to State that information from one source's EER often cannot be compared to information from another's. Although this problem might be corrected by simply defining more precisely the desired content, standardizing the format will make it easier to ensure that the content is the same. Content problems that are duplicated among several sources can then be addressed more efficiently, as can periodic changes in format which may be appropriate.

- o A uniform format will facilitate review and evaluation of EERs. Effective review for many sources is currently stymied by significant variations in format. Many formats make it difficult to interpret much of the reported data for individual sources; and the differences from source to source make it difficult to conduct comparative analysis of performance experience. A uniform format will not only assist in solving problems of EER interpretation, but should enable the review to be simpler and more efficient.

- o Most State reviewers prefer a uniform format. This should facilitate State assumption of EER review responsibility.

- o The format must be flexible enough to allow for agencies to obtain additional information. This is very important since most EER requirements vary to some degree from State to State, and many occasionally acquire different types of information for individual sources.

X. EPA SHOULD INITIATE A MINIMUM EER REVIEW PROGRAM IN THE REGIONAL OFFICES

(A) Explanation

This program should include the quarterly review of all EERs required to be submitted to EPA. This would include all NSPS EERs (whether or not the NSPS program has been delegated to a specific State), and those PSD and SIP EERs that are being filed in the Regional Office. The minimum review program should include:

- o A determination of timeliness.

- o A determination of completeness.

- o A review of the EER summary to determine whether the source should be targeted for follow-up. This review should be conducted according to a specific targeting strategy prepared by the Regional Office. (See example criteria in Recommendation No. XI.)

- o A more detailed evaluation of EERS targeted for follow-up according to criteria established by the Regional Office.

- o A periodic audit of EERs to ensure that the summary is accurate.

- o Prior to the time that source-prepared summaries are available, Regional Office personnel should prepare their own summaries, ensuring to the extent possible that the recommended summary information is obtained.

- o A specific allocation of staff hours and responsibility for EER review.

- o A system of staff and management accountability for EER review.

- o A strategy to encourage State agency assumption of an effective EER review program.

(B) Major Considerations

- o Lack of an EER Review Program adversely affects EPA's credibility among sources and may result in poorer compliance efforts. A major source criticism of EPA's CEMS program has been that it requires a source investment in time and resources to install and operate CEMS and report CEMS data, and that EERs are not used at all by most agencies and rarely even reviwed. In sum, there is a lack of credibility involving CEMS directly associated with the absence of EER review and follow-up. This affects both the quality of EER data, as well as quality assurance programs involving CEMS performance and the use of CEMS for emission control at some sources.

  An independent EPA EER Review Program will fill a performance gap in State EER review. Many States have indicated that they will not adopt EER review and follow-up procedures unless EPA establishes and commits to EER review guidelines. Others have indicated informally that they will conduct no EER review regardless of EPA's policy unless EPA provides specific resources for the review. Still others are committed to some limited level of review and would undoubtedly benefit by EPA guidance and leadership. Only a very few States have active, comprehensive EER review programs. It is felt that the most effective spur to State action will be an initial comprehensive effort by EPA, followed by a more and more selective effort as State agencies demonstrate their ability to implement effective EER programs on their own.

XI. EACH REGIONAL OFFICE SHOULD ESTABLISH TARGETING CRITERIA FOR EER FOLLOW-UP

(A) Explanation

Criteria for targeting and recommendations for follow-up should vary according to the different areas of review: (1) compliance with EER requirements; (2) emissions performance; (3) CEMS performance.

The urgency and severity of agency follow-up might be partly controlled by the severity of the problem documented in the EER. For instance, an incomplete EER or CEM data might be considered significant if the source had a history of poor emission control, or if it previously submitted high quality reports and high levels of CEM performance. Therefore, it is recommended that each agency devise its own set of criteria and recommended follow-up actions for each of the three areas noted above. Example criteria which might be useful when formulating an agency's undividual one are included in Section IV of the "Attachment."

(B) Major Considerations

EPA should not specify nationally applicable review and follow-up criteria. Regional Office contacted during this project want the freedom to develop criteria to suit their own specific circumstances. There is general agreement that the criteria should vary among source categories and even subcategories (especially with regard to specific cut points justifying follow-up action). However, examples should be useful to those Regional Offices and States who currently have no organized approach to EER review.

- Specifying a Review and follow-up protocol as a part of general EPA guidance. Regional Offices contacted during this project want the freedom to develop criteria to suit their own specific circumstances. However, this should not restrict the development and presentation of example criteria. An example should be useful to those Regional Offices and States who currently have no organized approach to EER review.

- Should there be a protocol at all? Concern has been raised that development of specific criteria for review and follow-up will have an overall negative effect. It has been pointed out that mere preparation of a protocol does not ensure that it will be implemented, and that it may be too confining and either restrict the Region's flexibility in an inappropriate way or be ignored. It has also been argued that establishing targeting criteria changes the underlying standard and will result in relaxed compliance efforts; and even though EPA may try to keep the protocol secret, it will inevitably become public, since efforts must be made to encourage State adoption of similar procedures.

- A follow-up program should not be delayed pending institution of uniform format and summary requirements. Although current EER content and format problems will restrict the extent to which agencies are able to develop effective and uniform follow-up criteria, it should be possible to proceed with some type of follow-up program based on individual source reports. The follow-up effort should be devoted to correcting deficiencies in content, and follow-up criteria should not require major changes in content or format. Major changes should be required only once, in a single nationwide effort.

- Targeting criteria must be expected to vary among source categories and some believe that they must vary from source to source.

Sample Form
10/3/84

CEMS GENERAL COMPLIANCE AUDIT DATA SHEET
(40 C.F.R. Part 60, Subpart D)

APPENDIX A-3

Instructions and Explanation

ITEM 1: Audit Results

ITEMS 2-4: Standard Source Identification Information

ITEM 5: Emission Requirements

Normally the emission limits and exceptions will be those specified in Subpart D; however, in some circumstances, variations may apply -- as a result of a special permit, enforcement, etc. Note the specific exception and the specific regulation or requirement in which it is contained (e.g., "operating permit" or "order," etc.). "Description of Control System" is meant to provide space for identifying the basic control system (e.g., "hot side ESP rated 99.2%" or "long term low sulfur coal contract").

ITEM 6: CEMS Compliance Status

In general, answer yes/no and provide other information as requested:

- "Type of CSA/CEM Requirement" Enter the type of requirement (e.g., NSPS regulation, permit, enforcement order, etc.).
- "Dates CEMS Installed/Operational" Enter the date of installation and the date the CEMS began operating.
- "Date(s) of PST?" Enter symbol "P" with the most recent date passed. If it passed, then recently failed, both occurrences might be noted (e.g., P-7/19/81; F-6/4/84).
- "Is Source Filing EERs? To Whom?" Yes/no. If yes, specify to whom by entering "State," "EPA" or "State & EPA."
- "Do EERs Indicate Emissions Problems?" Yes/no. If "yes," provide more information in ITEM 8 or in an attached sheet.
- "Do EERs Indicate CEMS Problems?" Yes/no. If "yes," provide more information in ITEM 8 or in an attached sheet.
- "Do EERs Comply with Reporting Requirements?" Yes/no. If "no," provide more information in ITEM 8 or in attached sheet.
- "Results of Agency Field Audit" If not conducted, enter "n/a." If conducted, enter "P" (pass), "F" (failed), or "Inc" (Incomplete), and the date -- for the most recent audit. If "F," more detailed information should be provided in ITEM 8 or in an attached sheet.

ITEM 7: Basic CEMS Identification Information

ITEM 8: Additional Baseline Information/Comments

In addition to expanded information on prior items, other baseline information may be included (e.g., a summary of a quality assurance plan, test schedules or monitor replacement plans, etc.).

ITEM 9: Follow-up Action Plan (If Appropriate)

In follow-up action is necessary, note recommended follow-up action, management concurrence, etc.

Sample Form
10/3/84

CEMS GENERAL COMPLIANCE AUDIT DATA SHEET

40 C.F.R. Part 60, Subpart D
(See Instruction Sheet)

APPENDIX 3(Cont)

1. Audit Results

Follow-up Recommended _____ (Yes/No, see # 8)

_____ (Name)

_____ (Date)

2. Company _____

3. Plant/Unit(s) _____

Address _____

_____

Source Type _____

Size _____

4. CEMS Contact _____ (Name)

_____ (Position)

_____ (Telphone No.)

5. Emission Requirements

	Emission Limitations	Exceptions/ Type of Exception	Description of Control System
Opacity			
SO_2			
NO_x			

6. CEMS Compliance Status

	Type of CSA/CEMS Requirement	Date(s) CEMS Installed/ Operational	Date(s) of PST	Is Source Filing EERs? To Whom?	Do EERs Indicate Emissions Problems?	Do EERs Indicate CEMS Problems?	Do EERs Comply w/ Reporting Requirements?	Results of Agency Field Audit
Opacity		/		/				
SO_2		/		/				
NO_x		/		/				

7. Basic Monitor Information

	Monitor Make, Model & Serial Number	Recorder Type and Model	Computer/ Software	Other
Opacity				
SO_2				
NO_x				
CO_2				
O_2				

8. Additional Baseline Information/Comments

9. Follow-up Action Plan (If Appropriate)

NSPS SOURCE CATEGORIES WHICH ARE REQUIRED TO USE CONTINOUS EMISSION MONITORS (as of October 1, 1984)

Subpart	Source Category	Pollutant
D	STEAM GENERATORS	
	Solid Fossil Fuel	Opacity, SO_2, NO_X
	Liquid Fossil Fuel	Opacity, SO_2, NO_X
	Gaseous Fossil Fuel	NO_X
Da	ELECTRIC UTILITY STEAM GENERATING UNITS	
	Solid Fossil Fuel	Opacity, SO_2 (at inlet and outlet of control device), NO_X
	Liquid Fossil Fuel	Opacity, SO_2 (at inlet and outlet of control device), NO_X
	Gaseous Fossil Fuel	NO_X
G	NITRIC ACID PLANTS	NO_X
H	SULFURIC ACID PLANTS	SO_2
J	PETROLEUM REFINERIES	
	FCCU	Opacity, CO
	Combustion of Fuel Gases	SO_2 or H_2S
	Sulfur Recovery Plant	SO_2[a], H_2S[b], TRS[b], TRS[b]
N	IRON AND STEEL PLANTS	
P	PRIMARY COPPER SMELTERS	Opacity, SO_2
O	PRIMARY ZINC SMELTERS	Opacity, SO_2

[a] For oxidation control systems.

[b] For reduction control systems not followed by incineration.

APPENDIX 4 (Cont)

Subpart	Source Category	Pollutant
R	PRIMARY LEAD SMELTERS	Opacity, SO_2
Z	FERROALLOY PRODUCTION FACILITIES	Opacity
AA	STEEL PLANTS: ELECTRIC ARC FURNACES	Opacity
BB	KRAFT PULP MILLS	
	Recovery Furnace	Opacity TRS (dry basis)
	Lime kiln, digester system, brown stock washer system, multiple effect evaporator system, black liquor oxidation system, or condensate stripper system.	TRS (dry basis)
HH	LIME MANUFACTURING PLANTS	
	Rotary Lime Kilns	Opacity[a]

[a] Does not apply when there is a wet scrubbing emission control device.